

SUPPORT FOR THE AMENDMENTS

Claims 1-7 are canceled.

Claims 8-36 are new and are supported by original claims 1-7 and throughout the specification. Multiple dependencies present in the original claims are removed in the new claims. Support for the description of the off-gas stream comprising unreacted olefin and oxygen is found on page 2, lines 35-36, and page 4, line 1, in the specification. Support for the description of nitrogen is found on page 3, line 1, in the specification.

No new matter will be added to this application by entry of this amendment.

Upon entry of this amendment, Claims 8-36 are active.

REMARKS/ARGUMENTS

The claimed invention is related to processes for the production of oxiranes by the epoxidation of olefins with hydroperoxides. In such processes selectivity of oxirane formation is optimized by maintaining the per cent conversion of olefin in the 85 to 95% range. Therefore improvement in the efficiency and economy of oxiranes production can be obtained by recovering unreacted olefin and returning it to the epoxidation reactor.

The claimed invention addresses this problem by providing a process and corresponding apparatus for the continuous recirculation of an olefin which has not been reacted in the epoxidation of olefins by means of hydroperoxide to give oxiranes and is present in an offgas stream formed during the epoxidation, comprising: (i) compressing and cooling the offgas stream, (ii) separating the olefin from the offgas stream obtained in step (i) by distillation, and (iii) epoxidizing the olefin separated off in step (ii) by means of hydroperoxide, wherein the offgas stream comprises the unreacted olefin and oxygen. No such process is disclosed or suggested in the cited references.

Applicants wish to thank Examiners Gallis and Dentz for the courteous and helpful discussion of this application with Applicants' U.S. representative, on November 15, 2007. At that time, Applicants' U.S. representative reviewed and compared the description of the cited references relative to the process and apparatus of the claimed invention. Specific amendments to the claims to more clearly distinguish the claimed invention from the description of the cited references were discussed. The following is intended to reiterate and expand upon that discussion.

Applicants respectfully note that new Claim 8 includes the description that the off-gas stream comprises the unreacted olefin and oxygen. New Claim 9 describes the off-gas stream further comprises nitrogen. The original claims are canceled and new claims 8-36 added. As the new claims do not contain multiple dependencies, Applicants respectfully submit that the objection to Claims 4 through 7 under 37 C.F.R. 1.75(c) is obviated by the amendment and request withdrawal of the objection.

The rejection of Claims 1 through 3 under 35 U.S.C. 103(a) over Forlin et al. (WO 02/14298) and further in view of Greco (U.S. 3,000,188) is respectfully traversed.

Individually and in combination, the cited references neither disclose nor suggest the process as described in Claim 8 wherein the offgas stream comprises the unreacted olefin and **oxygen**.

Forlin is directed to a process for the continuous production of an olefin oxide by direct oxidation of an olefin with hydrogen peroxide in a solvent and buffer medium. The liquid product mixture is distilled to obtain a head component of olefin and olefin oxide. The olefin is recycled to the reaction zone, while the olefin oxide is again distilled to remove residual olefin which is also recycled. The tail product from the first distillation contains water, hydrogen peroxide and solvent. This mixture is decomposed and then the solvent is recovered and returned to the oxidation reactor. Applicants respectfully note that Forlin

describes separation of the olefin from the olefin oxide in a second distillation and that the olefin is directly returned to the reaction zone with no further treatment.

In contrast, in the process of the claimed invention the offgas stream comprising unreacted **olefin and oxygen** is compressed, cooled and further separated. The Office has admitted that Forlin does not teach compressing and cooling the offgas stream and has cited Greco to show compression and cooling.

Greco is directed to a process for the separation of a normally gaseous hydrocarbon component from a **mixture of normally gaseous hydrocarbons**. Greco does not disclose or suggest a process of separation of a mixture comprising oxygen as obtained in an offgas stream from an epoxidation of olefins by means of hydroperoxide. Applicants have pointed out on page 1, lines 25-30, and page 2, lines 23-24, the potential for explosive mixtures being formed in such an epoxidation reaction.

Applicants respectfully call the Examiner's attention to the following excerpt from the Office's own discussion of "**Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in View of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc.***"

"The rationale to support a conclusion that the claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods **with no change in their respective functions**, and the **combination would have yielded nothing more than predictable results** to one of ordinary skill in the art at the time of the invention.⁴³ "[I]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does."⁴⁴ **If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art,"** (Federal Register, Vol. 72, No. 195, page 57529) (**Bold added**)

Applicants respectfully submit that the Office has not demonstrated that one skilled in the art could have combined the elements of Greco with Forlin as claimed by known methods **with no change in their respective functions**, and the **combination would have yielded nothing more than predictable results** to one of ordinary skill in the art at the time of the invention. Greco does not suggest or provide motivation to use compression and cooling for the separation of offgas streams containing oxygen. Moreover, Greco provides no motivation to lead Forlin to further distillation of the olefin separated from the olefin oxide.

In view of the foregoing, Applicants respectfully submit that Greco does not cure the deficiency of Forlin and therefore, the combination of references neither anticipates nor renders obvious the claimed invention. Withdrawal of the rejection of Claims 1 through 3 under 35 U.S.C. 103(a) over Forlin et al. and further in view of Greco is respectfully requested.

Applicants respectfully submit that Claims 8-36 are in condition for allowance and early notice of such action is earnestly solicited.

Respectfully submitted,

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